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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,454	09/11/2003	Thomas A. Victorian	899.072US1	4911
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SCHWEGMAN, LUNDBERG & WOESSNER, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			EXAMINER LAO, LUN S	
			ART UNIT 2615	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/660,454

Applicant(s)

VICTORIAN ET AL.

Examiner

Lun-See Lao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 9-18 and 22-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-18, and 22-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Introduction*

1. This action is in response to the amendment filed on 05-09-2007. Claims 26, 28 and 30-33 are amended. Claims 1-5, 9-18, and 22-35 are pending. Thus claims 6-8, 19-21, and 36-42 have been withdrawn from further consideration by the examiner.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nemirovski (US PAT. 6,671,379) in view of Anderson (US PAT. 5,721,783).

Consider claim 1 Nemirovski teaches a system adapted for use in an ear having an ear canal, comprising:

a first microphone (see fig.3 (20)) adapted for use in the ear canal, the first microphone receiving an occluded sound from about the ear canal;

a processor (24), connected to the first microphone(20), to process the occluded sound (the sound block by housing 30, see fig. 3); a wireless transmitter (14 in fig.1), connected to the processor, to receive the processed occluded sound from the processor and transmit a first wireless signal representing the occluded sound(see figs. 1-3 and col. 6 line 4 and col. 7 line 51); but Nemirovski does not explicitly teach an

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earmold housing the first microphone, the processor, and the wireless transmitter, the earmold configured for use as an in-the-ear (ITE) device.

However, Anderson teaches an earmold housing (10 in fig.1) the first microphone (12), the processor, and the wireless transmitter (13 in fig.1), the earmold configured for use as an in-the-ear (ITE) device (see fig.1 and col. 3 line 52-col. 4 line 25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Anderson into the teaching of Nemirovski so that the hearing aid taught by Nemirovski would have been less weight and saving space.

Consider claim 2 Anderson teaches a wireless receiver (see fig.1 (13)), connected to the processor (13), to receive a second wireless signal representing a remote sound; and a speaker (15) connected to the processor, the speaker adapted for use in the ear canal, wherein: the processor further processes the remote sound, and the speaker is adapted to transmit the processed remote sound to the ear canal; and the earmold further houses the wireless receiver and the speaker (see fig.1 and see col. 3 line 52-col. 4 line 25).

Consider claims 3-4 Nemirovski teaches that the first microphone and the speaker include one common device receiving the occluded sound and transmitting the processed remote sound (see col. 6 line 4-col. 7 line 51); and a second microphone connected to the processor, the second microphone adapted to receive an ambient sound from outside the ear canal, and wherein: the first processor further processes the

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ambient sound; and the speaker is configured to transmit the processed second and ambient sounds to the ear canal (see figs 3-5 and col. 6 line 4-col. 7 line 51).

Consider claim 5 Anderson teaches a voice operated exchange (VOX) circuit connected to the processor (see fig.1 and see col. 25 line 15-50).

Consider claims 9-11 Anderson teaches that the processor comprises a speech recognition module(see fig.1 and see col. 25 line 15-50); and the earmold is configured for use as an in-the-canal (ITC) device(see fig.1); and earmold is configured for use as a completely-in-the-canal (CIC) device(see fig.1 and see col. 25 line 15-50).

Consider claims 12-13 Nemirovski teaches that a remote device communicatively coupled to the wireless transmitter and the wireless receiver via a telemetry link providing for simultaneous bi-directional communication (see fig.1 line 8-60); and the remote device comprises at least one of a computer, a personal digital assistant (PDA), a cellular phone, a walkie talkie, or a language translator (see fig.1 line 8-60).

4. Claims 14-18 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nemirovski (US PAT. 6,671,379) in view of Dar (US PAT. 5,761,319).

Consider claim 14 Nemirovski teaches that a system adapted for use in and about an ear having an ear canal, comprising: an in-the-ear (ITE) module (see fig.3 (30)) including a first microphone (20 in fig.3) adapted for use in the ear canal, the first microphone receiving an occluded sound from about the ear canal; and

a processor (24 in fig.3), connected to the first microphone (20), to process the occluded sound; and a wireless transmitter (14 in fig.1), connected to the processor

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(24), to receive the processed occluded sound from the processor and transmit a first wireless signal representing the occluded sound (the sound block by housing 30, see fig. 3)(see fig.3 and see col. 6 line 4 and col. 7 line 51); but Nemirovski does not teach a behind-the-ear (BTE) module attached to the ITE module.

However Dar teaches that a behind-the-ear (BTE) module attached to the ITE module (see figs 2A-2B, 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Dar into the teaching of Nemirovski so that the hearing aid taught by Nemirovski would have more space for battery compartment for longer power and provide more choices to the user to choose the battery locating at the BTE compartment or ITE compartment or both.

Consider claim 15 Dar teaches that the ITE module further comprises a speaker adapted for use in the ear canal, the speaker transmitting a remote sound to the ear canal, and the BTE module further comprises a wireless receiver to receives a second wireless signal representing the remote sound, wherein the speaker and the wireless receiver are connected to the first processor, which further processes the remote sound (see fig 2A, fig.3 and see col. 4 line 13-58).

Consider claim 16 Nemirovski teaches that the first microphone (see fig.3 (20)) and the speaker (22) include one common device receiving the occluded sound and transmitting the processed remote sound (see col. 6 line 4-col. 7 line 51).

Consider claim 17 Nemirovski teaches the module comprises a second microphone (see fig.5 (18)) connected to the processor, the second microphone adapted to receive

an ambient sound from outside the ear canal, and wherein: the processor further processes the ambient sound; and the speaker is configured to transmit the processed second and ambient sounds to the ear canal (see fig.3 and see col. 6 line4-col. 7 line 51 and see the discussion above claim 14).

Consider claim 18 Dar teaches a BTE module; but Nemirovski and Dar do not teach a voice operated exchange (VOX) circuit.

However, the voice operated exchange (VOX) circuit is well known in the art (office notice is taken).

Therefore, it would have been obvious the hearing aid taught by Nemirovski and Dar could would have a voice operated exchange (VOX) circuit as claimed to provide more convenience.

Claim 22 is essentially similar to claim 18 and is rejected for the reason stated above apropos to claim 18.

Consider claim 23 Dar teaches a BTE module; but Nemirovski and Dar do not teach a rechargeable battery. However Nemirovski and Dar do not limit their battery to any specific kind. The rechargeable battery is well known in the art (official notice is taken).

Therefore, it would have been obvious the hearing aid taught by Nemirovski and Dar could would have a rechargeable battery as claimed to reuse natural resources and create less waste.

Consider claims 24-25 Nemirovski teaches that a remote device communicatively coupled to the wireless transmitter and the wireless receiver via a telemetry link providing for simultaneous bi-directional communication (see fig.1 line 8-60); and the

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remote device comprises at least one of a computer, a personal digital assistant (PDA), a cellular phone, a walkie talkie, or a language translator (see fig.1 line 8-60).

5. Claims 26-27 and 30-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nemirovski (US PAT. 6,671,379) in view of Brander (US PAT. 5,991,419) and Dar (US PAT. 5,761,319).

Consider claim 26 Nemirovski teaches a system (see fig.3) adapted for use in a first ear having a first ear canal and a second ear having a second ear canal, comprising:

a first ear-level device including: a first microphone (20) adapted for use in the first ear canal, the first microphone receiving an occluded sound from about the first ear canal; a first processor (24), connected to the first microphone, to convert the occluded sound to a first electrical signal; and a wireless transmitter (14), connected to the first processor (24), to receive the first electrical signal and transmit a first wireless signal representing the occluded sound (see col. 6 line 4 –col. 7 line 51); but Nemirovski does not clearly teach a second ear-level device including: a wireless receiver to receive a second wireless signal representing a remote sound; a second processor, connected to the wireless receiver, to convert the second wireless signal to the remote sound; and a speaker connected to the second processor, the speaker adapted for use in the second ear canal to transmit the remote sound to the second ear canal, wherein the first and second ear-level devices are each one of a behind-the-ear (BTE) device and an in-the-ear (ITE) device.



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However, Brander teaches a second ear-level device including (see fig.1): a wireless receiver (20) to receive a second wireless signal representing a remote sound; a second processor (18), connected to the wireless receiver, to convert the second wireless signal to the remote sound; and a speaker (10) connected to the second processor, the speaker adapted for use in the second ear canal to transmit the remote sound to the second ear canal (see fig.3 and see col. 3 line25-col. 4 line 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Brander into the teaching of Nemirovski so that the hearing aid taught by Nemirovski would have been compact.

On the other hand, Dar teaches that the first and second ear-level devices are each one of a behind-the-ear (BTE) device(see fig.3, (50) and an in-the-ear (ITE) device (40 and see col. 4 line 13-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Dar into the teaching of Nemirovski so that the hearing aid taught by Nemirovski would have more space for battery compartment for longer power and provide more choices to the user to choose the battery locating at the BTE compartment or ITE compartment or both.

Consider claim 27 Brander teaches that the second ear-level device further comprises a second microphone (see fig.3, 12) connected to the second processor (42), the second microphone adapted to receive an ambient sound from outside the second ear canal, and wherein: the second processor further processes the ambient sound; and the

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speaker is configured to transmit the remote sound and the processed ambient sound to the first ear canal (see fig.3 and see col. 3 line25-col. 4 line 67).

Consider claim 31 Nemirovski teaches that the first and second ear-level devices are each an in-the-ear (ITE) device (see fig.3 (30) and see col. 6 line 4-67).

Consider claims 32-34 Brander teaches that the first and second ear-level devices are each an in-the-canal (ITC) device (see fig.3 and see col. 1 line 39-col. 2 line 10); and the first and second ear-level devices are each an completely-in-the-canal (CIC) device (see fig.3 and see col. 1 line 39-col. 2 line 10); and that a remote device communicatively coupled to the first and second ear-level devices (see figs.1 –3 and see col. 3 line 25-col. 4 line 67).

Consider claim 35 Nemirovski teaches that the remote device comprises at least one of a computer, a personal digital assistant (PDA), a cellular phone, a walkie talkie, or a language translator (see fig.1 line 8-60).

Consider claim 30 Nemirovski and Brander do not teach the first and second ear-level devices are each an behind-the-ear (BTE) device, but Nemirovski and Dar do not limit their hearing aid to any specific kind. The behind-the-ear (BTE) device (office notice is taken) is well known in the art.

Therefore, it would have been obvious the hearing aid taught by Nemirovski and Brander could would have a type of behind-the-ear (BTE) device as claimed to provide different hearing aid devices to let the user to choose.

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6. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nemirovski (US PAT. 6,671,379) as modified by Brander (US PAT. 5,991,419) and Dar (US PAT. 5,761,319) as applied to claim 26, above and further in view of Kvaloy (US PAT. 6,728,385).

Consider claim 28 Nemirovski and Brander does not teach the first ear-level device further comprises a first voice operated exchange (VOX) circuit connected to the first processor, and the second ear-level device further comprises a second VOX circuit connected to the second processor.

However, Kvaloy teaches the first ear-level device further comprises a first voice operated exchange (VOX) circuit connected to the first processor, and the second ear-level device further comprises a second VOX circuit connected to the second processor (see figs 1-3 and see col. 5 line 1- col. 6 line 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Kvaloy into the teaching of Nemirovski and Dar so that the hearing aid taught by Nemirovski and Brander would have been more convenience for the user.

Consider claim 29 Kvaloy teaches that the first processor and the second processor each comprise a speech recognition module (see figs 1-3 and see col. 5 line 1- col. 6 line 67).

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***Response to Arguments***

7. Applicant's arguments with respect to claim 1-5, 9-18, and 22-35 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that the office action does not set forth a proper prima facie case of obviousness because the cited portions of Nemirovski and Anderson, individually or in combination, do not provide the claimed subject matter (see the remarks page 12 second paragraph).

8. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Nemirovski and Anderson both teach a hearing device using in an ear canal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Anderson into the teaching of Nemirovski so that the hearing aid taught by Nemirovski would have been less weight and saving space. On the other hand, Nemirovski teach the housing 30 can be custom designed for the individual to form a close and comfortable fit with the ear of the individual (see col. 6 line 23-57). One of ordinary skill in the art would modify

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Nemirovski's system by housing its communication device 14 into an earmold housing such as the one provided by Anderson.

Applicant argued that Applicant is unable to find in the cited portions of Nemirovski and Anderson, among other things, a wireless transmitter to transmit a first wireless signal representing an occluded sound, and an earmold housing the wireless transmitter, as recited in claim 1(see the remarks page 12 second paragraph)..

The examiner disagrees. Nemirovski teaches a processor (24 in fig.3), connected to the first microphone(20), to process the occluded sound (the sound block by housing 30, see fig. 3); a wireless transmitter (14 in fig.1), connected to the processor(24 in figs. 3-4), to receive the processed occluded sound from the processor and transmit a first wireless signal representing the occluded sound(see figs. 1-3 and col. 6 line 4 and col. 7 line 51); and Anderson teaches an earmold housing (10 in fig.1) the first microphone (12), the processor, and the wireless transmitter (13 in fig.1), the earmold configured for use as an in-the-ear (ITE) device (see fig.1 and col. 3 line 52-col. 4 line 25). The combination meets the limitation as recited in claim 1.

Applicant further argued that Applicant respectfully traverses the rejection and submits that the office action does not set forth a proper prima facie case of obviousness because the cited portions of Nemirovski and Dar, individually or in combination, do not provide the claimed subject matter. For example, Applicant is unable to find in the cited portions of Nemirovski and Dar, among other things, a behind-the-ear (BTE) module including a wireless transmitter to transmit a first wireless signal

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representing an occluded sound, as recited in claim 14 (see the remarks page 13, 4<sup>th</sup> paragraph).

The examiner disagrees. Nemirovski disclose that a processor (24 in fig.3), connected to the first microphone (20), to process the occluded sound; and a wireless transmitter (14 in fig.1), connected to the processor (24), to receive the processed occluded sound from the processor and transmit a first wireless signal representing the occluded sound (the sound block by housing 30, see fig. 3)(see fig.3 and see col. 6 line 4 and col. 7 line 51); and Dar teaches that a behind-the-ear (BTE) module attached to the ITE module (see figs 2A-2B, 3).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Nemirovski and Dar both teach a hearing device using in an ear canal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Dar into the teaching of Nemirovski so that the hearing aid taught by Nemirovski would have more space for battery compartment for longer power and provide more choices to the user to choose the battery locating at the BTE compartment or ITE compartment or both. On the other hand, Nemirovski teach the housing 30 can

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be custom designed for the individual to form a close and comfortable fit with the ear of the individual (see col. 6 line 23-57). One of ordinary skill in the art would modify Nemirovski's system by housing its communication device 14 into a BTE such as the one provided by Dar.

Applicant further argued that Dar's BTE module does not result in an BTE module including a wireless transmitter (see the remarks page 14 second paragraph).

The examiner disagrees. Dar discloses an BTE module including a wireless transmitter (see fig. 3, (50), and col. 4 line 13-19). Therefore, the combination is proper and meets the limitation as recited in claim 14.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Brimhall (US 2002/0080979) is cited to show other related external ear canal voice detection.

11. Any response to this action should be mailed to:

Mail Stop \_\_\_\_ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

**(571) 273-8300**

Hand-delivered responses should be brought to:

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao, Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao, Lun-See  
Patent Examiner  
US Patent and Trademark Office  
Knox




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Date 12-14-2007

  
VRIAN CHIN  
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